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REMARKS

Reconsideration of this application is now being requested. Claims 1-20 are now in this application.

Claims 1, 16 and 19 were rejected under 35 USC §102 as being anticipated by Razavilar et al (US Publication 2003/0104831). The office action alleges that Razavilar teaches "adjusting a first channel condition threshold (target channel condition) by a variable step size (+ and/or - a step size)" and a "receiver 620 using the nth variable steps 612 and 614 responsive to the error detection portion" to adjust nth iteration channel condition threshold. Figs 4 and 6 and page 8 paragraphs 72, 73, 77 and 79 were cited in support thereof. The office action further alleges that Razavilar discloses "the nth channel condition threshold is associated with the nth modulation and coding scheme level used in the first data packet transmission", wherein the channel condition threshold corresponds to the MCS level (Par. 72; BPSK, QPSK rate 1/2 , QPSK rate 3/4 , 16 QAM rate ½,...) used in the data packet transmission (Par. 72-73). Applicants respectfully disagree.

First, claim 1 recites the limitation of "adjusting a first channel condition threshold...using a first variable step" (underline added). In Applicants' earlier response, it was inadvertently stated that "Razavilar does disclose a variable step size" (underline added). This inadvertent statement was a typographical error. It should have been obvious that Applicants meant to argue that "Razavilar does not disclose a variable step size". Razavilar teaches adjusting a target channel condition metric corresponding to the ith terminal by reducing it by one step size (step 612) or increasing it by one step size (step 614). There is no teaching or suggestion that the step sizes of Razavilar are variable. Applicants respectfully request an explanation why the term "one step size" should be interpreted as a "variable step size".

Second, claim 1 recites the limitation of "the first channel condition threshold is based on a first modulation and coding scheme (MCS) level used in the first

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data packet transmission". In Par. 73, Razavilar discloses that "target channel condition metrics for each terminal are assigned for each admissible rate depending on the Type of Service (ToS)" of the signaling. It may appear to Applicants that the Examiner is trying to equate ToS to MCS level. In Par. 73, it is not made clear what is meant by "ToS". However, in Par. 50, voice, video and data services were provided as examples of ToS. Voice, video and data services are not MCS levels. Furthermore, although Razavilar discloses modulation schemes, such modulation schemes are used to determine admissible rates (Par. 72), not target channel condition metrics. Thus, accordingly, it is felt that claim 1 is patentable under 35 USC §102 over Razavilar.

Claims 16 and 19 depend upon, and include all the limitations of, claim 1 and, thus, are also felt to be patentable under 35 USC §102 over Razavilar.

Claim 2 was rejected under 35 USC §103(a) over Razavilar, and in further view of Shibutani et al (US Pub. 2002/0193133). The office action alleges that Razavilar teaches all the subject matter claimed above except "for the step of adjusting the first channel condition threshold comprising of determining the first variable step by using a desired MCS (i.e., Modulation and Coding Scheme) error rate for the first MCS level". The office action further alleges that Shibutani teaches, in the same field of endeavor, determining the maximum data rate corresponding to the given error performance of the received signal for a specific MCS level (Fig. 4, pg. 5, par. 50). Applicants respectfully disagree.

Claim 2 includes all the limitations of claim 1 plus the additional step of "determining the first variable step by using a desired MCS error rate for the first MCS level". First, for the reasons stated earlier, Razavilar does not teach all the limitations of claim 1. Second, although Shibutani may teach determining a maximum data rate corresponding to the given error performance of the received signal for a specific MCS level, it does not teach the additional limitation of claim 2, i.e., determining the first variable step by using a desired MCS error rate for the first MCS level. There is no

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teaching or suggestion in Shibutani of determining a <u>variable step</u>. Determining a maximum data rate is not the same as determining a variable step used for adjusting a channel condition threshold.

Third, there is no teaching or suggestion in Shibutani that such variable step size would be determined based on a <u>desired MCS error rate</u>. In the present application, at page 7, lines 27-28, the desired MCS error rate is described as "the probability that a data packet transmitted using MCS level n would not be received successfully by a particular receiver". Shibutani does not teach or suggest a desired MCS error rate much less such a MCS error rate used in determining a variable step. Accordingly, it is felt that claim 2 is patentable under 35 USC §103(a) over Razavilar, and in further view of Shibutani.

Claims 4 and 7 were rejected under 35 USC §103(a) over Razavilar and Shibutani, further in view of Sindhushayana et al (US Pub. 2004/0202196). The office action alleges that Razavilar and Shibutani teach all the subject matter claimed above except for the desired MCS error rate of the first MCS level being based on a block or bit error rate target criterion. The office action further alleges that Sindhushayana, in the same field of endeavor, teaches a desired MCS error rate for a certain MCS level is based on a packet error rate (i.e., PER) target criterion (Fig. 3; Pg 4, Par. 41-45 and 47), and that one of ordinary skill in the art would clearly recognize to use bit or block error rate target criterion as an error performance. Applicants respectfully disagree.

Claims 4 and 7 include all the limitations of claim 1 and 2 plus the additional limitation of wherein the desired MCS error rate for the first MCS level is based on a block or bit error rate target criterion. First, for the reasons stated earlier, Razavilar nor Shibutani, alone or in combination, do not teach all the limitations of claims 1 and 2. Second, Sindhushayana does not teach a MCS error rate base based on a block or bit error rate target criterion. In the present application, at page 7, lines 27-28, the desired MCS error rate is described as "the probability that a data packet transmitted using MCS level n would not be received successfully by a <u>particular receiver</u>". Sindhushayana teaches a PER

(packet error rate) probability corresponding to a probability that a packet with a certain data rate was received in error (par. 47). PER probability is not the probability that a data packet transmitted using MCS level n would not be received successfully by a particular receiver, i.e., MCS error rate." Accordingly, it is felt that claims 4 and 7 are patentable under 35 USC §103(a) over Razavilar and Shibutani, further in view of Sindhushayana.

Claim 10 was rejected under 35 USC §103(a) over Razavilar, in further view of Sindhushayana. The office action alleges that "Razavilar et al teach all the subject matter as recited in claims 1 and 2 above, except for the step of adjusting the first channel condition threshold comprises of determining the first variable step using a block or bit error rate target criterion and a first data rate associated with the first MCS level". The office action further alleges that Sindhushayana, in the same field of endeavor, teaches the desired MCS error rate for a certain MCS level is based on a packet error rate (i.e., PER) target criterion (Fig. 3; Pg. 4, Par. 41-45 and 47). Applicants respectfully disagree.

Claim 10 includes all the limitations of claim 1 plus the additional limitation of "determining the first variable step using a block or bit error rate target criterion and a first data rate associated with the first MCS level". First, for the reasons stated earlier, Razavilar does not teach all the limitations of claim 1. Second, Sindhushayana does not teach a determining a variable step for adjusting a channel condition threshold. Sindhushayana teaches selecting transmission rates, adjusting not channel condition thresholds. Sindhushayana teaches using probabilities α of selecting rates R so that a throughput estimate TH for a date rate combination R can be maximized under the condition that p_{target} is achieved (Fig. 3, par. 62). That is, probabilities are being calculated in order to select a particular data rate(s). There are no step sizes being calculated. Accordingly, it is felt that claim 10 is patentable under 35 USC §103(a) over Razavilar and Shibutani, further in view of Sindhushayana.

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Claim 11 was rejected under 35 USC §103(a) over Razavilar, in further view of Engstrom et al (US Patent 6,639,934). The office action alleges that Razavilar teaches all the limitations as recited in claim 1 above, except for the additional limitation of "the first variable step is associated with a first variable up step and a first variable down step, the first channel condition threshold being increased an amount based on the first variable up step if the first error detection result indicates the first data transmission was unsuccessful, the first channel condition threshold being decreased an amount based on the first variable down step if the first error detection result indicates the first data transmission was successful". The office action further alleges that the additional limitation recited in claim 11 is disclosed in Engstrom. Applicants respectfully disagree.

Claim 11 depends upon, and includes all the limitations of, claim 1. For the aforementioned reasons, Razavilar does not teach all the limitations of claim 1. Accordingly, it is felt that claim 11 is patentable under 35 USC §103(a) over Razavilar, in further view of Engstrom.

Claims 12-13 were rejected under 35 USC §103(a) over Razavilar and Engstrom, in further view of Sindhushayana. The office action alleges that Razavilar and Engstrom teach all the subject matter claimed above, except for the additional limitations recited in claims 12 and 13, i.e., "wherein for a block error rate target criterion, the first channel condition is adjusted an amount equal to the first variable up step if the first error detection result indicates the first data transmission was unsuccessful, and the first channel condition is adjusted an amount equal to the first variable down step if the first error detection result indicates the first data transmission was successful" and "wherein for a bit error rate target criterion, the first channel condition is adjusted an amount based on the first variable up step and a data rate associated with the first data transmission if the first error detection result indicates the first data transmission was unsuccessful, and the first channel condition is adjusted an amount based on the first variable down step and a data rate associated with the first data transmission if the first error detection result indicates the

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first data transmission was successful". The office action further alleges that Sindhushayana teaches adjusting the channel condition threshold value based on the result of the packet error rate target criterion (Fig. 3; Pg. 4, Par. 41-15 and 47). Applicants respectfully disagree.

Claims 12-13 depends upon, and includes all the limitations of, claim 11. First, for the aforementioned reasons, Razavilar and Engstrom, alone or in combination, do not teach all the limitations of claim 11. Second, Sindhushayana does not teach adjusting the channel condition threshold value based on the result of the packet error rate target criterion. As stated earlier, Sindhushayana teaches selecting transmission rates, adjusting not channel condition thresholds. Accordingly, it is felt that claims 12-13 are patentable under 35 USC §103(a) over Razavilar and Engstrom, in further view of Sindhushayana.

Claims 17-18 were rejected under 35 USC §103(a) over Razavilar, and in further view of Shibutani. The office action alleges that Razavilar teaches all the subject matter as recited in claim 1, except for the additional limitations of claims 17 and 18. Applicants respectfully disagree. Claims 17-18 depend upon, and include all the limitations of, claim 1. For the aforementioned reasons, Razavilar does not teach all the limitations of claim 1. Accordingly, it is felt that claims 17-18 are patentable under 35 USC §103(a) over Razavilar, and in further view of Shibutani..

Claim 20 was rejected under 35 USC §103(a) over Razavilar. Claim 20 depend upon, and include all the limitations of, claim 1. Accordingly, it is felt that claim 20 is patentable under 35 USC §103(a) over Razavilar

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Claims 3, 5-6, 8-9 and 14-15 were objected to as being upon a rejected base claim but would have been allowable if rewritten into independent form. For the reasons discussed above, it is felt that claims 3, 5-6, 8-9 and 14-15 are allowable in their present form.

Respectfully submitted,

Sridhar Gollamudi

Pantelis Monogioudis

Sten R Saten

Steven R. Santema

Reg. No. 40156

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Docket Administrator (Room 3J-219)
Lucent Technologies Inc.
101 Crawfords Corner Road
Holmdel, NJ 07733-3030

I hereby certify that this correspondence is being facsimile transmitted to the Commissioner for Patents Fax No. 571-273-8300 on the date shown below.

Carol Wolf   *12/27/05*
Carol Wolf   Date